CHANGING ARMY QUALITY ASSURANCE/SURVEILLANCE

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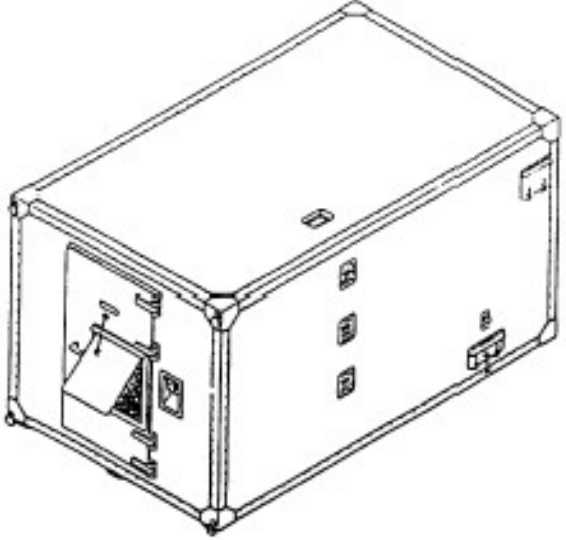
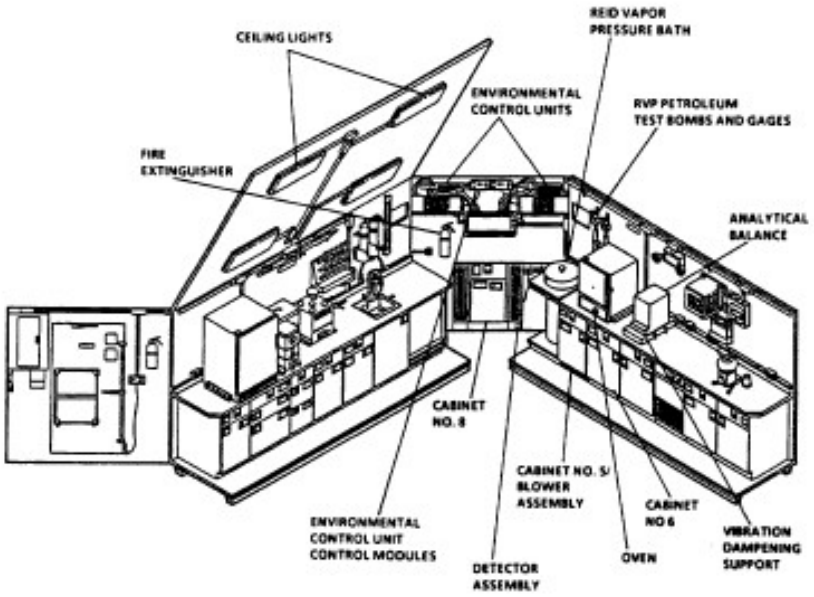
DISCUSION

- OPERATIONS & LESSONS LEARNED
- CHANGING THE LAB MISSION
- IMPROVING OPERATIONAL QS
- REDESIGNING THE ARMY QA/QS TESTIN STRUCTURE



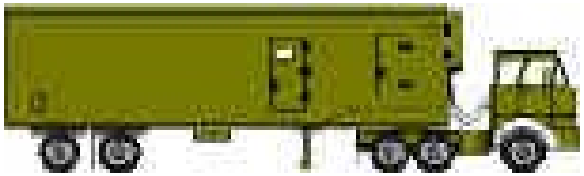
AIRMOBILE AVIATION FUEL LABORATORY



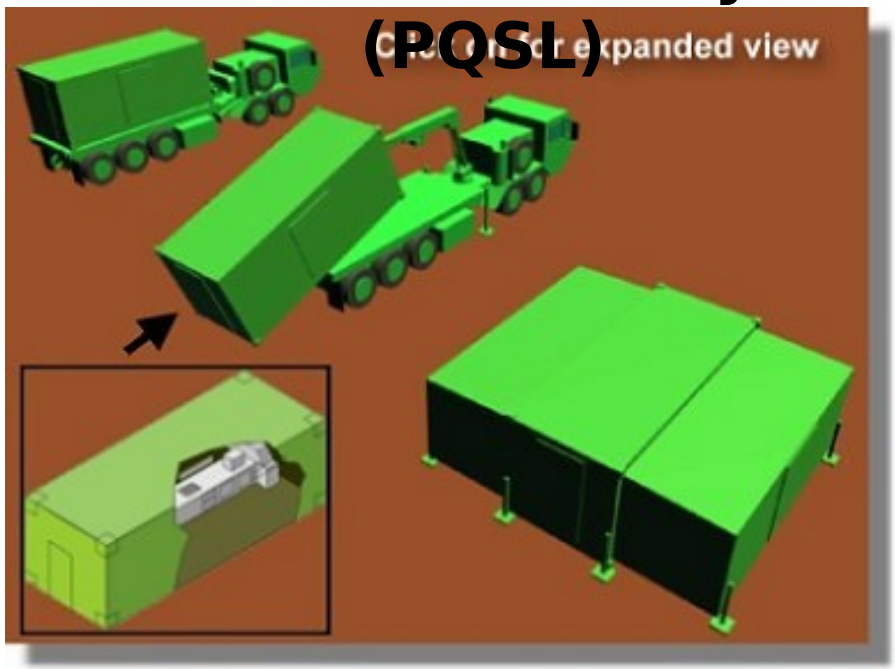
PQAS

Petroleum Quality Analysis System

Mobile Semi-Trailer Mounted Petroleum Lab



Petroleum Quality Surveillance Laboratory (PQSL)



OPERATIONS & LESSONS LEARNED

Large Scale Conflict (OIF/Desert Storm) **– Bot**
Mobile and air mobile labs deployed.

- **Mobile semi-trailer labs conduct B-2 testing pipeline receipts, storage tanks and general**

- **Airmobile labs perform QS particulate contamination testing almost entirely.**

OPERATIONS & LESSONS LEARNED

Regional/Operations other than war
(Bosnia & Kosovo)

- **Airmobile labs are deployed and are inade to the task.**
- **Prolonged operations**
- **Bosnia Diesel fuel and AVGAS**
- **Bosnia (A/C Flameouts)**
- **French additization in Kosovo**
- **Suspected sabotage**
- **Airmobile labs performing C level tests**

OPERATIONS & LESSONS LEARNED

Regional/Operations other than war
(Bosnia & Kosovo) Continued.

Bottom Line

Deployment of semi-trailer labs would have allowed all required testing to be performed in theater and would have provided more experienced NCO's capable of analyzing results and resolving problems locally.

OPERATIONS & LESSONS LEARNED

Low Intensity Conflict (Afghanistan)

Mobile semi-trailer mounted lab deployed to
K-K deals with procurement of TS-1 and DF2
Issues include:

- **Thermal stability concerns of the USAF.**
- **Freezing Point on DF-2/TS-1 blends,**
- **Viscosity of diesel.**
- **B-2/B-3 procurement testing.**
- **Kandahar deals with Jet A-1 procurements from Pakistan and other local sources.**

OPERATIONS & LESSONS LEARNED

Low Intensity Conflict (Afghanistan) Continued

Bottom Line:

Airmobile labs would have been significantl
under-matched in the Enduring Freedom AO
Need for upgrade/modernization of the mob
clearly shown

OPERATIONS & LESSONS LEARNED

Interim/Objective/Unit of Action Force

- **Deployment of elements in Afghanistan re support of a mobile semi-trailer lab.**

- **PQAS would not be capable of providing procurement analysis or independently deve blend guidance.**

- **Experience at PQAS level would have been inappropriate for level of operations which i USMC, USAF and NATO forces.**

OPERATIONS & LESSONS LEARNED

***Bottom Line*:**

- **Divisional/Brigade forces concerned with contamination from distribution systems.**

- **Fuel coming from outside the division can be tested using procurement origin testing laboratory, DESC contract lab, DoD regional Lab, mobile semi-trailer mounted lab or Petroleum Quality**

CHANGING THE LAB MISSION

- **Airmobile lab and Petroleum Quality Analy**

System (Airmobile lab replacement) are pro

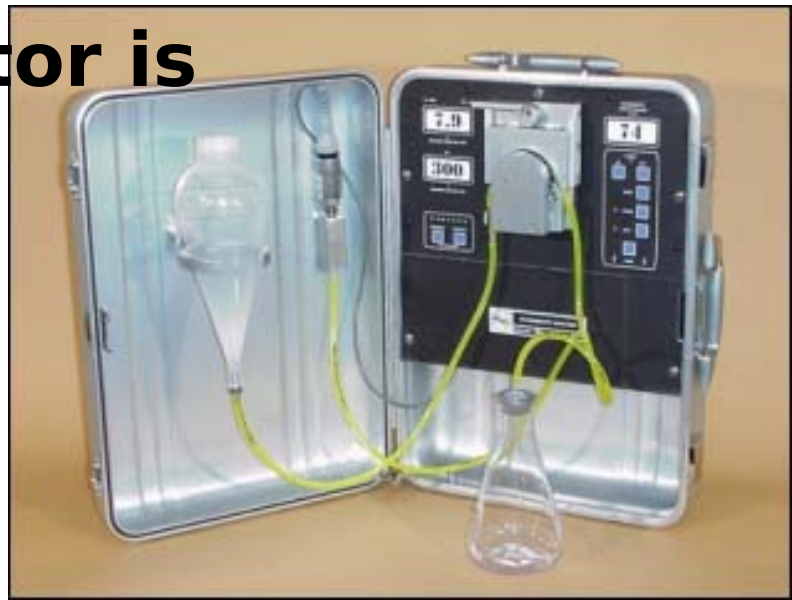
not necessary, IF an adequate small test ca

is available to ensure filter separators are

operational.

CHANGING THE LAB MISSION- FILTERABILITY TESTING

- Sample: 300 ml, Flow Rate: 20 ml/min
- Test ends when filter exceeds 15 psi or 300 ml has passed.
- Filterability quality factor is displayed.



CHANGING THE LAB MISSION-

APPROVED TEST METHODS

- **ASTM D 6426-02 Standard Test Method for Determining Filterability Middle Distillate Fuel Oils**

- **ASTM D 6824-02 Standard Test Method for Determining Filterability of Aviation Turbine Fuel**

CHANGING THE LAB MISSION- DEVELOPING SPEC REQUIREMENTS

- SERVICE AND DESC CONSENSUS

- ARMY, NAVY, AIR FORCE DEVELOPING R&D PROPOSAL FOR DIESEL, BIO-DIESEL, JP5, AN JP8 FILTERABILITY SPECIFICATION USE LIMIT

REDESIGNING THE ARMY QA/QS STRUCTURE

Redesigning the Army QA/QS Testing Structure

- **Field the Petroleum Test Kit with capability to measure;**
  API Gravity, Filterability, Free Water Content,
  Fuel System Icing Inhibitor, Static Dissipating Additive,
  and weighted sampling device.

- **Issue the test kit in lieu of the Detector Kit Auto/Aviation,**
  Aviation Fuel Contamination Test Kit, Airmobile
  Petroleum Laboratory, and Petroleum Quality Analysis
  System.

REDESIGNING THE ARMY QA/QS STRUCTURE

- **Modify/Repair/Reset the Mobile Semi-Trailer Mounted laboratory's with upgrade/modernized petroleum test equipment to as near A level capability as possible for Jet Turbine Fuels.**

- **Take action to stop production of the Petroleum Quality Analysis System, and initiate action to begin development of**

ECONOMIC/MANNING/DEPLOYMENT CONSIDERATIONS

Economic Consideration

Termination of the PQAS program (est. savings) + $2
Rebuild of 8 Mobile labs & addition of new equipment @ $300K ea:
Development and production of PQSL - $3
Net estimated cost over current plan = - $1

Potential Manning Reduction

Revised PTK could be operated by MOS 77F assuming appropriate tr
Potentially reduction of requirement for MOS 77L in Army Divisions
assuming total fielding of 24 PQAS systems @ 2 77L ea.

NOTE: The following estimates are rough figures based on the Operational Requirements Documents for PQAS, PQSL & PTK.

ECONOMIC/MANNING/DEPLOYMENT CONSIDERATIONS

Conclusion

- **Interim/Objective/Future Force requirements met at minimal cost.**

- **Upgrade of lab capability improves in-theater QA/QS.**

- **Filterability testing more accurately reflects filter performance and fuel quality.**

ECONOMIC/MANNING/DEPLOYMENT CONSIDERATIONS

Conclusion

- **Filterability testing performed at the fuel source reducing est. 80-90% of samples.**

- **Potential reduction of 77L manpower requirements and reduce equipment deployment requirements.**

- **Filter separator maintenance & element replacement can be significantly reduced.**